

Pushing the Envelope			
2009 Mathematics			
Academic Standards			
Nebraska Mathematics			
Grade 5			
Activity/Lesson	State	Standards	
Chemistry (pgs. 25-41)	NE	MA.5.MA 5.2.5.e	Relate volume to the operations of multiplication and addition and solve real-world and mathematical problems involving volume. Measure weight (mass) and temperature using metric units
Pushing the Envelope			
2009 Mathematics			
Academic Standards			
Nebraska Mathematics			
Grade 6			
Activity/Lesson	State	Standards	
Types of Engines (pgs. 11-23)	NE	MA.6.MA 6.2.5.c	Convert length, weight (mass), and liquid capacity from one unit to another within the same system
Chemistry (pgs. 25-41)	NE	MA.6.MA 6.2.5.b	Measure volume/capacity using the metric system
Physics and Math (pgs. 43-63)	NE	MA.6.MA 6.3.1.a	Describe and create simple algebraic expressions (e.g., one operation, one variable) from words and tables
Physics and Math (pgs. 43-63)	NE	MA.6.MA 6.3.1.b	Use a variable to describe a situation with an equation (e.g., one-step, one variable)
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2009 Mathematics			
Academic Standards			
Nebraska Mathematics			
Grade 7			
Activity/Lesson	State	Standards	
Types of Engines (pgs. 11-23)	NE	MA.7.MA 7.3.3.c	Given the value of the variable(s), evaluate algebraic expressions with respect to order of operations
Chemistry (pgs. 25-41)	NE	MA.7.MA 7.3.3.c	Given the value of the variable(s), evaluate algebraic expressions with respect to order of operations
Physics and Math (pgs. 43-63)	NE	MA.7.MA 7.3.1.b	Use a variable to describe a situation with an inequality (e.g., one-step, one variable)
Physics and Math (pgs. 43-63)	NE	MA.7.MA 7.3.3.c	Given the value of the variable(s), evaluate algebraic expressions with respect to order of operations
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2009 Mathematics			
Academic Standards			
Nebraska Mathematics			
Grade 8			
Activity/Lesson	State	Standards	

Chemistry (pgs. 25-41)	NE	MA.8.MA 8.2.5.b	Determine surface area and volume of three-dimensional objects (e.g., rectangular prisms, cylinders)
Physics and Math (pgs. 43-63)	NE	MA.8.MA 8.1.3.e	Solve problems involving ratios and proportions (e.g., $x/5 = 10/17$)
Physics and Math (pgs. 43-63)	NE	MA.8.MA 8.3.1.c	Identify constant slope from tables and graphs
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2009 Mathematics			
Academic Standards			
Nebraska Mathematics			
Grades 9-12			
Activity/Lesson	State	Standards	
Types of Engines (pgs. 11-23)	NE	MA.9-12.MA 12.3.3.l	Evaluate polynomial and rational expressions and expressions containing radicals and absolute values at specified values of their variables
Types of Engines (pgs. 11-23)	NE	MA.9-12.MA 12.3.3.m	Derive and use the formulas for the general term and summation of finite arithmetic and geometric series
Chemistry (pgs. 25-41)	NE	MA.9-12.MA 12.2.5.a	Use strategies to find surface area and volume of complex objects
Chemistry (pgs. 25-41)	NE	MA.9-12.MA 12.2.5.f	Determine surface area and volume of three-dimensional objects (e.g., spheres, cones, pyramids)
Chemistry (pgs. 25-41)	NE	MA.9-12.MA 12.2.5.g	Know that the effect of a scale factor k on length, area and volume is to multiply each by k , k^2 and k^3 , respectively
Chemistry (pgs. 25-41)	NE	MA.9-12.MA 12.3.3.l	Evaluate polynomial and rational expressions and expressions containing radicals and absolute values at specified values of their variables
Chemistry (pgs. 25-41)	NE	MA.9-12.MA 12.3.3.m	Derive and use the formulas for the general term and summation of finite arithmetic and geometric series
Physics and Math (pgs. 43-63)	NE	MA.9-12.MA 12.3.1.a	Represent, interpret, and analyze functions with graphs, tables, and algebraic notation and convert among these representations (e.g., linear, non-linear)
Physics and Math (pgs. 43-63)	NE	MA.9-12.MA 12.3.1.h	Represent, interpret, and analyze functions and their inverses
Physics and Math (pgs. 43-63)	NE	MA.9-12.MA 12.3.3.l	Evaluate polynomial and rational expressions and expressions containing radicals and absolute values at specified values of their variables
Physics and Math (pgs. 43-63)	NE	MA.9-12.MA 12.3.3.m	Derive and use the formulas for the general term and summation of finite arithmetic and geometric series
Physics and Math (pgs. 43-63)	NE	MA.9-12.MA 12.3.3.o	Solve an equation involving several variables for one variable in terms of the others

Rocket Activity (pgs. 69-75)	NE	MA.9-12.MA 12.3.3.m	Derive and use the formulas for the general term and summation of finite arithmetic and geometric series
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